

denuded by cattle, sheep, and goats, resulting in the extermination of the endemic flora and fauna; and on the larger islands the native forest has been reduced to less than one-fourth of its original extent. Below 1500 to 2000 feet few endemic insects remain. The voracious introduced ant, *Pheidole megacephala*, which occurs everywhere in the lowlands, alone has accounted for untold slaughter. Introduced parasitic wasps, likewise, have attacked certain of the endemic species; and in 1913, 90% or more of two species of endemic Cerambycidae were found to be parasitized by foreign *Ischiogonus* wasps. In all, Dr. Zimmerman estimates that a third or more of the endemic insect species of the islands have become extinct, and most of the survivors have been greatly reduced in numbers.

Man has discovered, however, that, if he is to continue to inhabit the archipelago, he must protect the watersheds. About one-fourth of the total area is now forest reserve, but not all the forest reserve is clothed in native forest.

MELVILLE H. HATCH.

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A CENTURY OF ENTOMOLOGY IN THE PACIFIC NORTHWEST, by Melville H. Hatch. University of Washington Press, Seattle. March 14, 1949. \$1.50.

This is an interesting little booklet of 43 pages with portraits of ten entomologists. It recalls the development of interest in insects in the Pacific Northwest region and the persons who took part. It briefly mentions the early collectors and the specialists who received their specimens, the colleges where entomology has been taught, the agencies concerned with insect control and eradication, the principle collections and their custodians, and the publications of the local entomologists.

It will be of interest to all those concerned with the insects of the region, as well as to biographers of entomologists and historians of entomology.

Professor Hatch divides the history of entomology in the Pacific Northwest into three periods, that of itinerant collectors from 1834 to 1875, that of resident collectors from 1875 to 1890, and that of established laboratories from 1890 to the present. Three periods of somewhat different extent can also be seen in Professor Hatch's history, resulting from a different line of approach; these are a period of collecting from 1834 to 1890, with the specimens studied largely by eastern or European scientists; a period of development of economic

entomology and aspects related thereto from 1890 to 1930; and since 1930 the beginning of a period of more basic interest in insects, with increase in teaching facilities, in taxonomic work, and in direct publications.

No analysis of needs or forecast of the future is attempted by Professor Hatch. However, his remarks do seem to establish the basis for certain generalities and to indicate needed future developments. The Pacific Northwest of this study is not exactly the portion of northwestern North America which lies along the Pacific Ocean, for this region would include Alaska and the Aleutian Islands. It is rather a specified region in the Far West of the United States and Canada which has come to be known in the Far West of the United States as Pacific Northwest. Professor Hatch defines this area as including British Columbia, Washington, Idaho, and Oregon.

The reviewer is impressed by the fact that in the three states no central agency has even yet been established for sponsoring entomological work in the area. No single depository has been established where major collections can eventually be deposited. No organization of entomologists has been formed to promote their interests or increase their personal contacts. No generally used local publication outlet has been established, although a close tie exists with the Pacific Coast Entomological Society and its *Pan-Pacific Entomologist* through membership and subscription. And each of the periods listed in the alternative scheme above has lagged considerably behind the corresponding periods in the more southerly Pacific area often referred to as the Pacific Coast and consisting principally of the state of California.

It is no criticism of the Pacific Northwest to point out its relative stage of development. But the entomologists of the area should get together and decide whether they wish to maintain the region separate from the more southerly influences or join them and take an active part in them. If the former, then a regional museum and library would seem to be an early need, through which the entomologists could keep in touch, and in which the results of their work might be preserved. In a region of such great entomological interest, there is sure to be increasing emphasis on the study of insects, and that study will become more substantial and productive as the local facilities and the professional training of the workers are increased.

We wish the entomologists of the Pacific Northwest all possible success in their work and foresee a period of great expansion and research.—R. E. B.